

Title (en)
OPTICAL FIBRE AMPLIFIER HAVING A CONTROLLED GAIN

Title (de)
FASEROPTISCHER VERSTÄRKER MIT GESTEUERTER VERSTÄRKUNG

Title (fr)
AMPLIFICATEUR A FIBRES OPTIQUES A COMMANDE DE GAIN

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Application
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Priority

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Abstract (en)
[origin: WO9950979A2] An optical fiber amplifier for WDM-signals comprises an active optical fiber (1, 3) pumped with pumping light from a pump source (17). In order to give the amplifier a constant gain for the WDM-signals irrespectively of the number of active WDM-signals an additional light source (29) is arranged to inject, when required, extra light into the active optical fiber, at least in a portion (3) thereof, through a power combiner (27). The injected light has a wavelength different from that of the WDM-channels and preferably longer so that it will not cause an amplifying or pumping effect in the active optical fiber but so that it still can be amplified in the active fiber. The light source (29) is controlled by a signal derived from an output power measurement device (23) so that it will inject extra light when a WDM-channel becomes inactive. The power of the extra light is thus selected to saturate the optical fiber amplifier at a constant gain irrespectively of the number of signal channels, i.e. of the total power of the input light signals. A light filter (18) can be connected to the output end of the active optical fiber (1, 3) to block light having a wavelength corresponding to the wavelength of the light issued from the light source (29). Controlling the gain by this injection of "extra signal light" is much quicker than controlling the power of the pumping light.

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